General

Guideline Title

The Society of Thoracic Surgeons guidelines on the diagnosis and staging of patients with esophageal cancer.

Bibliographic Source(s)

Varghese TK Jr, Hofstetter WL, Rizk NP, Low DE, Darling GE, Watson TJ, Mitchell JD, Krasna MJ. The Society of Thoracic Surgeons guidelines on the diagnosis and staging of patients with esophageal cancer. Ann Thorac Surg. 2013 Jul;96(1):346-56. [78 references] PubMed

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

The levels of evidence (A–C) and classification of recommendations (I–IV) are defined at the end of the "Major Recommendations" field.

Diagnosis of Esophageal Cancer

Class I Recommendation: Flexible endoscopy with biopsy is the primary method for the diagnosis of esophageal carcinoma. (Level of Evidence B)

Staging of Esophageal Cancer

Note: For the remaining recommendations, the following definitions will be used: early stage cancer refers to nodular high-grade dysplasia or T1a as defined by endoscopic ultrasonography (EUS); locoregionalized esophageal cancer refers to esophageal cancers from T1b to T4, any N, and M0; and distant metastatic disease refers to M1 disease.

- *Class I Recommendation*: For early stage esophageal cancer, computed tomography (CT) of the chest and abdomen is an optional test for staging. (Level of Evidence B)
- *Class I Recommendation*: For locoregionalized esophageal cancer, CT of the chest and abdomen is a recommended test for staging. (Level of Evidence B)
- *Class IIB Recommendation*: For early stage esophageal cancer, positron emission tomography (PET) is an optional test for staging. (Level of Evidence B)
- *Class I Recommendation*: For locoregionalized esophageal cancer, PET is a recommended test for staging. (Level of Evidence B)
- *Class IIA Recommendation*: In the absence of metastatic disease, EUS is recommended to improve the accuracy of clinical staging. (Level of Evidence B)

- *Class IIA Recommendation*: Endoscopic mucosal resection (EMR) should be considered as a diagnostic/staging tool for small, discrete nodules or areas of dysplasia when the disease appears limited to the mucosa or submucosa as assessed by EUS. (Level of Evidence B)

Metastasis

Class IIB Recommendation: For locally advanced (T3/T4) adenocarcinoma of the esophagogastric junction infiltrating the anatomic cardia or Siewart type III esophagogastric tumors, laparoscopy is recommended to improve the accuracy of staging. (Level of Evidence C)

Definitions:

Level of Evidence That Best Fits the Recommendation

Level A: Multiple populations evaluated. Data derived from multiple randomized clinical trials or meta-analyses.

Level B: Limited populations evaluated. Data derived from a single randomized trial or non-randomized studies.

Level C: Very limited populations evaluated. Only consensus opinion of experts, case studies, or standard of care are available.

Classification of Recommendations

Class I (benefit > > > risk): Procedure/treatment SHOULD be performed/administered.

Class IIA (benefit > > risk): Additional studies with focused objectives needed. IT IS REASONABLE to perform procedure/administer treatment.

Class IIB (benefit > risk): Additional studies with broad objectives needed; additional registry data would be helpful. Procedure/treatment MAY BE CONSIDERED.

Class III (no benefit): Procedure/test, not helpful. Treatment, no proven benefit.

Class IV (harm): Procedure, without benefit or harmful. Treatment, harmful to patients.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Esophageal cancer

Guideline Category

Diagnosis

Evaluation

Clinical Specialty

Gastroenterology

Oncology

Pathology

Radiology

Thoracic Surgery

Intended Users

Advanced Practice Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To systematically review the literature with regard to the diagnostic workup and staging of esophageal cancer
- To assist health-care providers in clinical decision-making by providing a range of acceptable approaches for the management of specific conditions

Target Population

Patients at risk or with a diagnosis of esophageal cancer

Interventions and Practices Considered

1. Flexible endoscopy with biopsy for diagnosis of esophageal carcinoma
2. Staging of esophageal cancer:
    - Computed tomography (CT) of the chest and abdomen
    - Positron emission tomography (PET)
    - Endoscopic ultrasonography (EUS)
    - Endoscopic mucosal resection (EMR)
    - Laparoscopy

Major Outcomes Considered

Sensitivity, specificity, and accuracy of diagnostic studies

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

For this systematic review on the diagnosis and staging of esophageal cancer, specific search terms were identified and targeted searches were run in PubMed/MEDLINE, EMBASE, and the Cochrane databases in June 2011. The results were limited to publications since 1990, and human subjects. The authors augmented the computerized literature search by manually reviewing the reference lists of identified studies and relevant reviews. In addition, the writing group identified articles from personal files. The following three medical subject heading (MeSH) terms were used:

"esophageal neoplasms," "early detection of cancer," and "neoplasm staging." Additional search strategies incorporated the MeSH subheadings of "analysis," "anatomy and histology," "classification," "diagnosis," "diagnostic use," "histology," "methods," "pathology," "standards," "trends," "ultrasonography," "positron emission tomography," and "trends."

In all, 4,064 articles and abstracts were identified through the initial EMBASE search, and 2,874 articles were identified through PubMed/MEDLINE. The Cochrane database identified 2 additional reviews and 191 clinical trials. Abstracts were reviewed by at least two authors and excluded if data were duplicative, not specifying esophageal cancer, purely descriptive, or incomplete. The resulting 80 articles served as the source for the review; 46 are cited and the remaining are listed in the appendix in the original guideline document.

Number of Source Documents

80 articles served as the source for the review.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Level of Evidence That Best Fits the Recommendation

Level A: Multiple populations evaluated. Data derived from multiple randomized clinical trials or meta-analyses.

Level B: Limited populations evaluated. Data derived from a single randomized trial or non-randomized studies.

Level C: Very limited populations evaluated. Only consensus opinion of experts, case studies, or standard of care are available.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

A task force was assembled through the Workforce on Evidence Based Surgery and the General Thoracic Surgery Workforce of the Society of Thoracic Surgeons (STS) with the goal of addressing the factors affecting the treatment of localized esophageal cancer.

Guideline recommendations were formulated and reviewed by all members of the writing group before approval by the Workforce on Evidence Based Surgery and the STS Executive Committee.

Rating Scheme for the Strength of the Recommendations

Classification of Recommendations

Class I (benefit > > > risk): Procedure/treatment SHOULD be performed/administered.

Class IIA (benefit > > risk): Additional studies with focused objectives needed. IT IS REASONABLE to perform procedure/administer treatment.

Class IIB (benefit > risk): Additional studies with broad objectives needed; additional registry data would be helpful. Procedure/treatment MAY BE CONSIDERED.

Class III (no benefit): Procedure/test, not helpful. Treatment, no proven benefit.

Class IV (harm): Procedure, without benefit or harmful. Treatment, harmful to patients.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Guideline recommendations were reviewed by all members of the writing group before approval by the Workforce on Evidence Based Surgery and the Society of Thoracic Surgeons (STS) Executive Committee.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Appropriate diagnosis and staging of patients with esophageal cancer
- There is increasing evidence that multimodality therapy (neoadjuvant chemotherapy or radiation therapy, or both, followed by esophagectomy) has increased survival benefits when compared with surgery alone for more advanced stages. Accurate staging information is thus critical for the determination of appropriate therapeutic intervention.

Potential Harms

Endoscopic Ultrasonography

As endoscopic ultrasound probes are typically larger in size, care should be used when attempting biopsies in the setting of stricture, in particular when dilating the tumor stricture.

Diagnostic Endoscopic Mucosal Resection

Perforation risk and bleeding risk are the most relevant and range from less than 1% to 2%, respectively.

Qualifying Statements

Qualifying Statements

The Society of Thoracic Surgeons Clinical Practice Guidelines are intended to assist physicians and other health care providers in clinical decision making by describing a range of generally acceptable approaches for the diagnosis, management, or prevention of specific diseases or conditions. These guidelines should not be considered inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the same results. Moreover, these guidelines are subject to change over time, without notice. The ultimate judgment regarding the care of a particular patient must be made by the physician in light of the individual circumstances presented by the patient.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Chart Documentation/Checklists/Forms

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013 Jul

Guideline Developer(s)

Society of Thoracic Surgeons - Medical Specialty Society

Source(s) of Funding

Society of Thoracic Surgeons

Guideline Committee

Society of Thoracic Surgeons Workforces on Evidence Based Surgery and General Thoracic Surgery

Composition of Group That Authored the Guideline

Workforce Members: Thomas K. Varghese, Jr, MD, MS; Wayne L. Hofstetter, MD; Nabil P. Rizk, MD; Donald E. Low, MD; Gail E. Darling, MD; Thomas J. Watson, MD; John D. Mitchell, MD; Mark J. Krasna, MD

Financial Disclosures/Conflicts of Interest

Drs. Varghese, Hofstetter, Rizk, Low, Darling, Watson, Mitchell, and Krasna have no conflicts of interest to declare regarding this work.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the Society of Thoracic Surgeons Web site.

Print copies: Available from The Society of Thoracic Surgeons, 633 N. Saint Clair St., Suite 2320, Chicago, IL, USA 60611-3658

Availability of Companion Documents

Elements considered critical for an endoscopy report for esophageal cancer, including a template for upper gastrointestinal endoscopy for esophageal cancer to initially stage esophageal or gastroesophageal junction carcinoma and templates for recording findings from endoscopic ultrasonography and endoscopic mucosal resection, can be found in the original guideline document.

Patient Resources

None available

NGC Status

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